



The PoolNaturally product line includes PoolNaturally Refills (moss) and dispensers for different-sized pools

Product Information Backgrounders

Creative Water Solutions' Research Using Sphagnum Moss

Entrepreneurs Dr. David Knighton, M.D. and Mr. Vance Fiegel, B.S. founded Creative Water Solutions LLC (CWS). Knighton, a vascular surgeon and expert in wound healing and chronic non-healing wounds, and Fiegel, a microbiologist and cellular biologist, are both experienced researchers and business owners (SEE BIOS). **Each has an extensive history of expertise in product research, innovation, and commercialization. Knighton and Fiegel became very interested in water treatment through their ongoing investigations for natural applications of plant life in medicine and their affect on bacterial growth.**

Research into treating and conditioning residential spa and pool water with sphagnum moss began in 2000 when Dr. Knighton and Mr. Fiegel became curious about why the lakes in northern Minnesota were always so pristine and fresh. Employing the scientific methodologies Knighton and Fiegel learned during several decades of new product development for the medical industry, research was focused on the hypothesis that certain species of sphagnum moss inhibited bacterial proliferation and biofilm formation effecting water quality and safety. These positive water quality effects can be observed in the lakes and rivers that are surrounded by moss bogs such as the ones in northern Minnesota and southern Canada.

Using the same standard industry assays called Minimum Biofilm Eliminating Concentration (MBEC) developed by Innovotech as employed at the Center for Biofilm Engineering at Montana State University; CWS' research has demonstrated the ability of the moss to inhibit the proliferation of bacteria and the accumulation of biofilm in these standard tests. These test results combined with years of beta site testing with pool and spa users, provides the basis for multiple patents that have been applied for. This line of research continues to provide provocative results confirming that the use of moss to treat biofilm could be a major breakthrough.

Describing Sphagnum Moss

There are hundreds of different species of sphagnum moss and it is very plentiful. Sphagnum moss is a soft, lush plant with small leaves that typically grows in bogs. It grows in bogs as a layer of vegetation almost floating on the water underneath. When it decays it becomes peat. Sphagnum moss is found in the higher latitudes of both the northern and southern hemispheres. Much of northern Minnesota and southern Ontario are covered with moss bogs. Similar latitudes in Europe, Russia, Chile and New Zealand also contain large areas of Sphagnum moss bogs. —over—

Today, Sphagnum moss is harvested in Wisconsin, Scandinavia, Chile and New Zealand mainly for applications in the flower industry where it is used to germinate orchids. Machines are used to harvest sphagnum moss from Wisconsin, while in New Zealand it is harvested by hand and transported out of the bog by helicopter to prevent any environmental damage. It re-grows in eighteen to thirty-six months after harvesting from roots and seeds left behind in the bog.

First Truly “Green” Product

Often there is confusion among consumers about what qualifies as a “green” product. In order to address this, The Living Green Expo conducted annually in Minnesota has adopted principles of sustainability developed by The Natural Step as the basis for their criteria to identify “earth friendly” products. **SpaNaturally** and **PoolNaturally** have met the qualifications in the following categories:

- Plant based
- Sustainable production
- Conserves and protects water
- Less toxic than the products currently available
- Socially responsible

Other than sterilizing the moss in the United States using proven procedures from the medical device industry, no secondary processing is done to the moss plant, thus maintaining SpaNaturally and PoolNaturally as the “truly” green product offering in the residential pool and spa industry. In addition, the insert from the previous month’s treatment is biodegradable.

PoolNaturally kit sizes:

- PoolNaturally kit 10” (less than 20,000 gallons)
 - For above ground and in ground pools
 - 10” dispenser and base
 - Installation kit and instructions
 - Wrench for easy lid removal
 - Requires standard size PoolNaturally refills
- PoolNaturally kit 20” (20,000-40,000 gallons)
 - For in ground pools
 - 20” dispenser and base
 - Installation kit and instructions
 - Wrench for easy lid removal
 - Requires large size PoolNaturally refills
- PoolNaturally kit 20” Mega (40,001 gallons and over)
 - For in ground pools
 - 2-20” dispensers and bases
 - Installation kit and instructions
 - Wrenches for easy lid removal
 - Requires large size PoolNaturally refills